

Is there sex bias against women reflected in industry payments and does it matter?



Andrea M. Russo, MD Camden, NJ

Sex differences in salary and academic ranking have been previously reported, with women receiving lower overall salaries and reduced likelihood of achieving a rank of full professor than men even after adjusting for other factors that influence salary or faculty rank.¹⁻⁴ Although women now represent over half of all matriculated medical students, women are greatly underrepresented in the field of cardiology, accounting for only 26% of first-year cardiology fellows in training, with even lower representation in clinical electrophysiology and interventional cardiology fellowships (9% and 8%, respectively) from 2017 to 2018.⁵ Reasons for sex differences may be multifactorial, but disparities in leadership roles and financial remuneration will certainly not encourage more women to enter the field.

In the current issue of the *American Heart Journal*, Raber et al⁶ present interesting data regarding sex differences in industry payments to cardiologists, demonstrating significant sex differences in both the United States and United Kingdom. In the United States, proportionately more men than women received industry payments (78.0% vs 68.5%, $P < .001$ in 2016), and men received more than double the dollar amount of payment than women (\$6,193 vs \$2,502, $P < .001$). In the United Kingdom, more men than women received industry payments (24.4% vs 13.5% in 2016), although the amount of payment difference was not statistically significant (but was numerically larger in men). These trends were similar in 2014 and 2015, or when excluding electrophysiology and interventional cardiology in 2016 as these interventional subspecialties are more likely to have associations with industry. Although it is difficult to make comparisons between the United States and United Kingdom, as UK physicians have the ability to opt out of public reporting, sex differences clearly exist on both sides of the Atlantic.

The relationships between physicians and industry are complex, fostering productive collaboration and innova-

tion on one hand while potentially contributing to bias on the other hand. The Physician Payment Sunshine Act was created with the Patient Protection and Affordable Care Act in 2010,⁷ and the Centers for Medicare & Medicaid Services created Open Payments in 2013 to help foster transparency and accountability by describing the nature and extent of financial ties between physicians and pharmaceutical and medical device industries.⁸ A prior report described payments to cardiologists that were highly variable, ranging from \$1.16 to a maximum of \$2,805,825 in 2015.⁹ When considering all types of payments (general, research, and ownership interest), a total of \$5.8 billion of industry payments were made to 365,801 physicians from various specialties from 2015 to 2017, with the top 5% of physicians accounting for 91% of industry payments.¹⁰ Interventional cardiologists receive among the highest median per-physician number of reported payments or median total industry payments per physician in the United States according to data from the Open Payments program between 2013 and 2015.^{11,12} Studies report regional variation in payments in the United States as well as outside the United States in the current study.^{6,11} Male sex and a longer length in clinical practice were independently associated with higher industry payments.¹⁰

Although, on the surface, these relationships with industry may have a negative connotation, there are clearly positive effects of collaborative relationships, including benefits related to funding for education, research, and quality improvement activities. Although the current study by Raber et al examines only general industry payments, excluding research, industry funding for innovation and research has become particularly important with limited governmental and other sources of research funding. General industry payments include speaking honoraria, educational grants, and consulting fees. These activities may also foster collaboration and networking between physicians or between physicians and industry.

So, do industry payments really matter? The importance of industry connections and networking opportunities should not be underestimated. This may be particularly important for younger faculty, including women who may not have similar networking opportunities on a local level. Device companies often sponsor conferences on medically relevant topics, and these conferences

From the and Cooper Medical School of Rowan University, Camden, NJ.

Submitted December 2, 2019; accepted December 12, 2019.

Reprint requests: Andrea M. Russo, MD, Professor of Medicine, Cooper Medical School of Rowan University, 393 Dorrance Bldg, One Cooper Plaza, Camden, NJ 08103.

E-mail: russo-andrea@cooperhealth.edu
0002-8703

© 2019 Elsevier Inc. All rights reserved.
<https://doi.org/10.1016/j.ahj.2019.12.011>

represent an opportunity for younger faculty to speak at an earlier career stage as invitations to national or international medical society scientific sessions may only occur after years of experience and original research publications. These industry-supported conferences may provide a positive experience for both men and women that includes connecting with company representatives and connecting with colleagues. Opportunities to network with more senior colleagues in a smaller group setting may provide opportunities for mentorship and sponsorship that could be key for future career advancement. For example, a talk given at a smaller industry-sponsored meeting may provide an opportunity for more senior faculty to meet and assess new talent, perhaps opening doors for younger faculty in the future. These connections may also provide access to research activities and grants that could help with career advancement. Contact with industry may also provide access to new technology that can help younger faculty grow their local programs, providing opportunities for involvement of young investigators in multicenter clinical trials or physician-initiated studies. Some industries also have events specific to women or early career physicians that may be specifically focused on making connections, leadership development, or mentorship opportunities.

Therefore, sex differences in industry payments identified by Raber et al really “do matter.” Although there are many limitations of the current study, acknowledged by the authors, the importance of this article in highlighting disparities is key to identifying the problem. Although age, rank, and number of years in practice are not available in the current study, sex differences in payments are apparent, consistent with prior study.^{13,14} Industry may be more likely to seek out highly experienced physicians or well-established investigators, and this is not accounted for in the current article. The current analysis does not include research payments, although disparities may also occur in this arena. In addition, the current study includes payments rather than services offered. It could be hypothesized that women might decline certain relationships such as speaking engagements that require travel because they may bear more responsibility for child care during earlier career stages. Industry opportunities may also be actively sought out by physicians, and women may be less likely to “ask” for opportunities that could lead to industry payments.

The current article should not be considered to necessarily imply a “fault” of industry. Instead, we should look upon this important information as a “call to action” for industry to examine current policies and enhance education and awareness of available opportunities for women, in addition to men, potentially reducing unconscious sex bias. If not already present, more formal diversity and equity criteria should be developed, perhaps including mentoring or sponsorship from already experienced physicians who have been successful with industry collaboration. These

data should also be used as a call to our professional societies to help raise awareness and promote establishment of leadership opportunities in many areas that can help women succeed. This represents “low hanging fruit” for collaboration between professional societies and industry. This call to action might also extend to examining industry payments to other potentially underrepresented groups based on race or ethnicity to identify differences and reduce gaps, if present.

In addition to support from industry and professional societies, mentorship and sponsorship from male colleagues are also needed. Raising awareness, promoting education, and engaging support from both men and women should make a difference in ensuring gender parity.

References

1. Ash AS, Carr PL, Goldstein R, et al. Compensation and advancement of women in academic medicine: is there equity? *Ann Intern Med* 2004 Aug 3;141(3):205-12.
2. Jena AB, Olenski AR, Blumenthal DM. Sex differences in physician salary in US public medical schools. *JAMA Intern Med* 2016 Sep 1;176(9):1294-304.
3. Jaggi R, Biga C, Poppas A, et al. Work activities and compensation of male and female cardiologists. *J Am Coll Cardiol* 2016 Feb 9;67(5):529-41.
4. Blumenthal DM, Olenski AR, Yeh RW, et al. Sex differences in faculty rank among academic cardiologists in the United States. *Circulation* 2017 Feb 7;135(6):506-17.
5. American Board of Internal Medicine (ABIM). Percentage of first-year fellows by gender and type of medical school attended. <https://www.abim.org/about/statistics-data/resident-fellow-workforce-data/first-year-fellows-by-gender-type-of-medical-school-attended.aspx>. Accessed November 29, 2019.
6. Raber I, McCarthy CP, Al Rifai M, Vaduganathan M, Michos ED, Wood MJ, Smyth YM, Ibrahim NE, DeFaria Yeh D, Asnani A, Mehran R, McEvoy JW. Gender differences in industry payments among cardiologists. *Amer Heart J* 2019;:xxx-xx.
7. Rules and regulations. *Fed Regist*. 42 CFR Parts 402 and 403. 2013;78(27):9457-9528. <https://www.cms.gov/OpenPayments/Downloads/Affordable-Care-Act-Section-6002-Final-Rule.pdf>. Accessed November 29, 2019.
8. Open payments data in context. Centers for Medicare & Medicaid Services website. <https://www.cms.gov/OpenPayments/About/Open-Payments-Data-in-Context>. Accessed November 29, 2019.
9. Jaiswal D, Checketts JX, Vassar M. *J Am Osteopath Assoc*. 2018 Dec 1;118(12):781-787. doi: <https://doi.org/10.7556/jaoa.2018.170>. Industry payments in cardiology: a cross-sectional analysis of open payments data.
10. Inoue K, Blumenthal DM, Elashoff D, et al. Association between physician characteristics and payments from industry in 2015-2017: observational study. *BMJ Open* 2019 Sep 20;9(9), e031010 <https://doi.org/10.1136/bmjopen-2019-031010>.
11. Parreco J, Donath E, Kozol R, et al. Comparing industry compensation of cardiothoracic surgeons and interventional cardiologists. *J Surg Res* 2017 Feb;208:51-9 <https://doi.org/10.1016/j.jss.2016.09.022> Epub 2016 Sep 17.
12. Tringale KR, Marshall D, Mackey TK, et al. Types and distribution of payments from industry to physicians in 2015. *JAMA* 2017 May 2;317(17):1774-84.

13. Eloy JA, Bobian M, Svider PF, et al. Association of gender with financial relationships between industry and academic otolaryngologists. *JAMA Otolaryngol Head Neck Surg* 2017 Aug 1;143(8):796-802.
14. Weiss A, Parina R, Tapia VJ, et al. Assessing the domino effect: female physician industry payments fall short, parallel gender inequalities in medicine. *Am J Surg* 2018 Oct;216(4):723-9.

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.